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10/626,165	07/24/2003	Christopher Cave	I-2-0369.1US	9718

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VOLPE AND KOENIG, P.C.
DEPT. ICC
UNITED PLAZA, SUITE 1600
30 SOUTH 17TH STREET
PHILADELPHIA, PA 19103

EXAMINER

LAM, DUNG LE

ART UNIT	PAPER NUMBER
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2617

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/626,165	Applicant(s) CAVE ET AL.	
	Examiner DUNG LAM	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 57-88 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 57-88 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 57-88 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The independent claims recite “on a frequency outside of allocated uplink and downlink frequencies”.

The examiner notes that according to the claimed invention, when the omnidirectional sounding pulse is being detected, no connection is established yet. Thus, at the point of the detecting stage, the uplink or downlink frequency has not been allocated or assigned yet or in other words is undefined . Thus a frequency that is outside of an allocated uplink and downlink frequencies or an undefined frequency is also undefined. Thus it is ambiguous what this frequency is.

It is not clear what is considered as "outside" of allocated uplink and downlink frequencies or what frequencies are allocated or who allocates these frequencies?

For examination purpose, the examiner interprets that these are the uplink and downlink frequencies that are regulated and allocated by the FCC. Since Bluetooth uses frequency outside of the frequency spectrum that is allocated by the FCC, Bluetooth reads on amended limitation because it uses the frequency outside of the uplink and downlink frequencies being regulated/allocated by the FCC.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **57-62, 64-69, 71-84, 86-88** rejected under 35 U.S.C. 103(a) as being unpatentable Jollota et al. (US 2004/0142691, hereinafter **Jollota**) in view of **Crichton** (US Patent No. 6330459).

Regarding **claim 71**, **Jollota** teaches a base station comprising:

- the base station configured to detect omnidirectional sounding pulses from wireless transmit/receive units (WTRUs) on a frequency outside of allocated uplink and downlink frequencies (BSU detects a Bluetooth inquiry [0024], Bluetooth uses frequency outside of the frequency spectrum that is allocated by the FCC);
- the base station configured to communicate information related to a detected omnidirectional sounding pulse from a WTRU to an interface (BSU sends received data structure to PSC [0024]);
- the base station configured to receive from the interface a notification to establish a wireless communication with the WTRU (PSC sends connection command to optimal BSU [0025-0026]); and

- the base station configured to begin a wireless communication with the WTRU in response to a notification to establish a wireless communication with the WTRU ([0025-0026]).

However, **Jollota** does not explicitly teach the base station configured to receive from the interface a relative location of the WTRU and selectively operating the beamforming antenna to direct a common channel toward the relative location of the WTRU.

In an analogous art, **Crichton** selectively operating the beamforming antenna (Fig. 3 and 4, Abstract) and the base station configured to receive from the interface a relative location of the WTRU and selectively operating the beamforming antenna to direct a common channel toward the relative location of the WTRU (BS receives from interface "OMC" to respond with narrow beam toward the direction of the communicating unit, C5 L55- C6 L5, C6 L25-55, C8 L40-60). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine Jollota's teaching of establishing a handover communication with Crichton's teaching of using a beamforming antenna to direct the common channel toward the location of the MS to minimize interference (Crichton C6 L9).

Regarding **claims 57, 64, 76 and 82** they are methods and apparatus claims that have the same corresponding limitations as claim and thus are rejected for the same reasons as claim 71.

Regarding **claims 58, 65, 72 and 77**, **Jollota and Crichton** teach the method of claim 57 wherein the communicated information related to the detected omnidirectional

sounding pulse includes information to facilitate determining the relative location of the WTRU ([0006]).

Regarding **claim 59, 66, 73, 78, and 83, Jollota and Crichton** teach the method of claim 58 wherein the communicated information related to the detected omnidirectional sounding pulse includes signal strength information ([24, 29], RSSI of received MU request), where the signal strength information indicates that the received signal strength crossed a threshold.

Regarding **claim 60, 67, 74, 79, and 84, Jollota and Crichton** teach the method of claim 57 wherein the communicated information related to the detected omnidirectional sounding pulse includes geolocation information (C5 L55- C6 L5, C6 L25-55, C8 L40-60).

Regarding **claim 61, 68, 75 and 80, Jollota and Crichton** teach the method of claim 57 further comprising transmitting a cyclic sweeping beacon channel (C5 L55- C6 L5, C6 L25-55, C8 L40-60).

Regarding **claim 62, 69 and 81, Jollota and Crichton** teach the method of claim 57 wherein detecting the omnidirectional sounding pulse includes detecting at least one of a plurality of omnidirectional sounding pulses ([0024-0026]).

Regarding **claim 86, Jollota and Crichton** teach the WTRU of claim 82 except wherein the antenna is an isotropic antenna configured to transmit equally in all directions. However, the examiner takes official notice that the use of isotropic antenna is well known in the art. Therefore it would have been obvious for one of ordinary skill in

the art at the time of the invention to combine Jollota and Crichton's teaching with the isotropic antenna to communicate signals from all directions.

Regarding **claim 87**, **Jollota and Crichton** teach the WTRU of claim 82 wherein the antenna is a selectively operable beamforming antenna configured to transmit directional beams and omnidirection sounding pulses comprising a plurality of directional sounding pulses (C5 L55- C6 L5, C6 L25-55, C8 L40-60).

Claim **85** rejected under 35 U.S.C. 103(a) as being unpatentable by **Jollota and Crichton** in view of **Velazquez et al. (US Patent No. 6,593,880)**.

Regarding **claim 85**, **Jollota and Crichton** teach the WTRU of claim 82 but is silent that the mobile unit is equipped with a global positioning system (GPS) and the transmitting of an omnidirectional sounding pulse includes transmitting of mobile unit location information associated with the sounding pulse transmitted by the mobile unit and/or includes transmitting of identification information associated with the sounding pulse transmitted the mobile unit. In an analogous art, **Velazquez** teaches that the UE has a GPS (C8 L20-37). Therefore it would have been obvious for one of ordinary skill in the art at the time of the invention for to add Valazquez's GPS to Watanabe and Jollota's handoff method to speed up the location positioning of the handset and thus to promote a faster handoff process.

Claims 63, 70 and 88 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Jollota and Crichton** in view of **Anderson et al.** (US Patent No. 5396541).

Regarding **claim 63 and 70**, **Jollota and Crichton** teach the method of claim 62 wherein the plurality of omnidirectional sounding pulses includes a first pulse having a first signal strength and a second pulse having a second signal strength, where the second signal strength is greater than the first signal strength. However, **Anderson** teaches a method of adjusting the power to a higher or lower level if the mobile is far or close from the base stations respectively (Col. 9, lines 50-15). In addition, it is also well known in the field of communications that after a failed transmission, one of ordinary skill in the art may use back-off algorithm to resend the signal in a predefined period of time. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine **Jollota and Crichton's** handoff method and **Anderson's** teaching of a increasing the signal power (if the mobile is far away from the base station) at a predefined period to increase the chance of a successful handoff.

Regarding **claim 88**, **Jollota and Crichton** teach the WTRU of claim 82 except the antenna is configured to transmit a series of omnidirectional sounding pulses to establish a new wireless. However, **Anderson** teaches a method of adjusting the power to a higher or lower level if the mobile is far or close from the base stations respectively (Col. 9, lines 50-15). In addition, it is also well known in the field of communications that after a failed transmission, one of ordinary skill in the art may use back-off algorithm to resend the signal in a predefined period of time. Therefore, it would have been

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obvious for one of ordinary skill in the art at the time of the invention to combine Watanabe and Jollota's handoff method and Anderson's teaching of a increasing the signal power (if the mobile is far away from the base station) at a predefined period to increase the chance of a successful handoff.

Response to Arguments

Applicant's arguments with respect to claims 57-88 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DUNG LAM whose telephone number is (571) 272-6497. The examiner can normally be reached on M - F 9 - 5:30 pm, Every Other Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Harper can be reached on (571) 272-7605. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/VINCENT P. HARPER/
Supervisory Patent Examiner, Art Unit 2617